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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,409	01/11/2000	ANANTH DODABALAPUR	19-2-16-18	4284

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EXAMINER

NGUYEN, TUAN M

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 07/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

Applicant(s)

09/480,409

DODABALAPUR ET AL.

Examiner

Art Unit

Tuan M Nguyen

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Drawings***

1. The drawing (figs 1a - 9) is objected for minor informaty. The boxes show in figures 1a - 9 are not labeled as required by 37 CFR 1.83(a). Applicant is required to submit a drawing correction for approval as require by rule 37 CFR 1.123

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

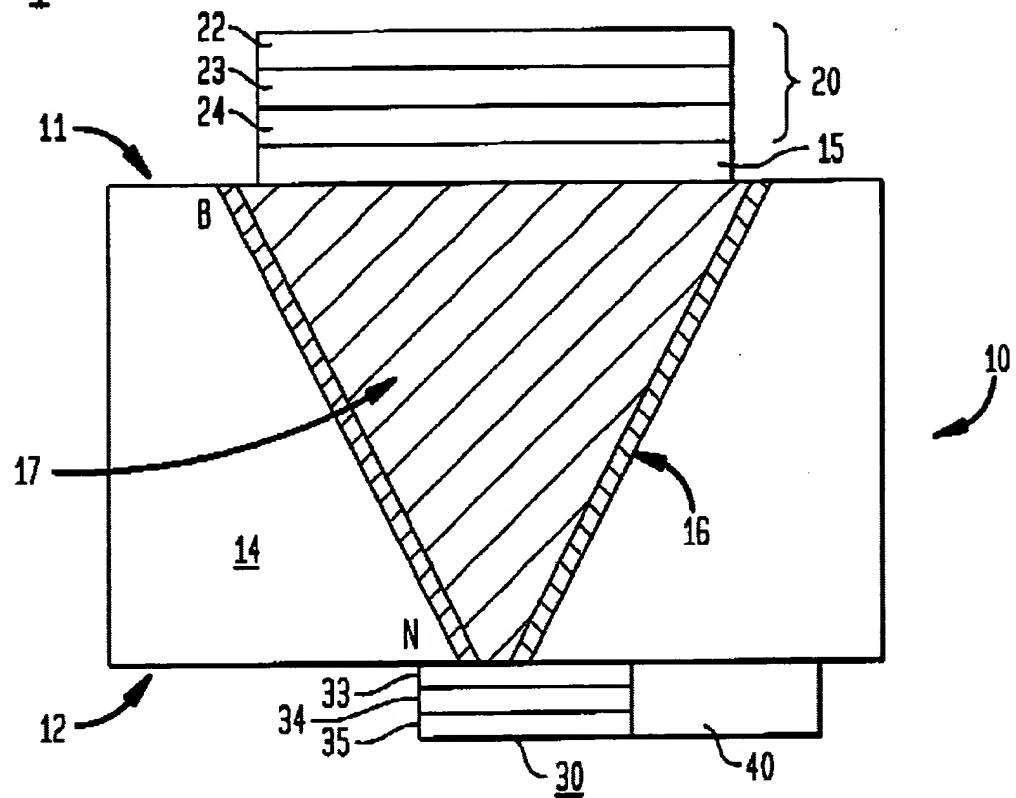
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-4, 6-8, 10-11,13, 18-19 are rejected under 35 U.S.C. 102(a) as being anticipated by Dodabalapur et al (US patent 6,363,096 B1).

With respect to claim 1, Dodabalapur disclose article comprising a plastic laser comprising core region (34), disposed between two cladding regions (33, 35), the output coupler (40) two dimensional, a wavelength laser (30) one dimensional, note cols. 5-6, see fig 1.

**FIG. 1**



With respect to claim 2, Dodabalapur discussed about the distributed feedback laser and a distributed Bragg reflector laser, note cols. 5-6.

With respect to claim 3, Dodabalapur discussed about the output coupler (40) in integrated in the same waveguide as the at least one first device, note cols. 5-6.

With respect to claim 4, Dodabalapur discussed about two cladding regions (33, 35), note cols. 5-6.

With respect to claim 6, Dodabalapur discussed about core region comprises organic material, note cols. 1 and 8.

With respect to claim 7, Dodabalapur discussed about 8-hydroxyquinoline aluminum (Alq) doped, note cols. 5-6.

With respect to claim 8, Dodabalapur discussed about two-dimensional grating comprises triangular lattices grating, note cols. 5-6.

With respect to claims 10 and 11, Dodabalapur discussed about plurality laser, and coupler in integrated on the same substrate as the plurality of lasers for emitting light to the coupler along a plurality of directions, note cols. 2 – 6.

With respect to claim 13, Dodabalapur discussed about output coupler (40) two – dimensional, laser (30) one-dimensional, note cols. 3-6, see fig 1.

With respect to claim 18, Dodabalapur discussed about an optical communications system, note col. 8.

With respect to claim 19, Dodabalapur discussed about the two-dimensional crystal coupler (40), one-dimensional crystal laser (30), the grating of the one-dimensional photonic crystal laser function as mirrors to define a resonant cavity coupler, note col. 5.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dodabalapur (US patent 6,363,096 B1) in view of Berggren et al (US patent 5,881,089).

With respect to claim 5, Dodabalapur discussed all about except for the SiO<sub>2</sub>. Whereas Berggren discussed about the cladding regions comprises SiO<sub>2</sub>, note cols. 4-5, see fig 10. For the benefit of two cladding regions comprises SiO<sub>2</sub>, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Dodabalapur with SiO<sub>2</sub> as taught or suggested by Berggren

6. Claims 9, 12, 14-17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dodabalapur (US patent 6,363,096 B1) in view of Alferness et al (US patent 4,904,045).

With respect to claims 9 and 12, Dodabalapur discussed all about except for the Bragg reflector. Whereas Alferness discussed about the Bragg reflector, note cols. 3 and 4. For the benefit of the Bragg reflector, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Dodabalapur with the Bragg reflector as taught or suggested by Alferness.

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With respect to claim 14, Dodabalapur discussed all about except for the vertical cavity surface-emitting laser. Whereas Alferness discussed about the vertical cavity surface emitting laser, note col. 10, see fig 8. For the benefit of the vertical cavity surface emitting laser, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Dodabalapur with vertical cavity surface emitting laser as taught or suggested by Alferness.

With respect to claim 15, Dodabalapur discussed all about except for the planar waveguide. Whereas Alferness discussed about the planar waveguide, note col. 9, see fig 3. For the benefit of planar waveguide, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Dodabalapur with the planar waveguide as taught or suggested by Alferness.

With respect to claim 16, Dodabalapur discussed all about except for the lasers fabricated with InGaAs, InGaAsP, GaAs. Whereas Alferness et al discussed about the lasers fabricated with InGaAs, InGaAsP, GaAs, note cols. 6-9. For the benefit to select from laser fabricated with InGaAs, InGaAsP, GaAs, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Dodabalapur with InGaAs, InGaAsP, GaAs as taught or suggested by Alferness.

With respect to claim 17, Dodabalapur discussed all about except for a quantum cascade laser. Whereas Alferness discussed about the quantum cascade laser, note col. 4. For the benefit to have a quantum cascade laser, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Dodabalapur quantum cascade laser as taught or suggested by Alferness.

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With respect to claim 20, Dodabalapur discussed all about except for the etching the areas of the structure and applying a layer of organic material over the structure. Whereas Alferness discussed about the etching and applying of organic material over the structure, note cols, 8-9. For the benefit of the etching and applying organic material over the structure, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Dodabalapur with etching and applying the organic material over the structure as taught or suggested by Alferness.

#### ***Citation Of The Pertinent References***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Hsu et al (US patent 6,263,002 B1) discloses tunable fiber fabry-perot surface-emitting lasers.

The patent to Mizutani (US patent 5,444,730) discloses single-wavelength semiconductor laser.

The patent to Furuya (US patent 4,464,762) discloses monolithically integrated distributed Bragg reflector laser.

#### ***Communication Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247.

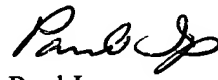
The examiner can normally be reached on 8am to 5pm.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip  
SPE  
Art unit 2828

TMN  
July 2, 2002